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10/781,624

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Katsuya Kase

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09/08/2008

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP

901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

ONEILL, KARIE AMBER

ART UNIT

PAPER NUMBER

1795

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/781,624 | Applicant(s) KASE ET AL. | |
| | Examiner Karie O'Neill | Art Unit 1795 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Applicant's arguments filed on June 10, 2008, were received. None of the claims have been amended. Therefore, claims 1-3 are pending in this office action.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on December 13, 2007.

Claim Rejections - 35 USC § 102/103

3. The rejection of Claims 1-3 under 35 U.S.C. 102 (b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Inoue et al. (JP 2000-021402), are maintained. The rejection is repeated below for convenience.

Inoue et al. disclose a nonaqueous electrolyte rechargeable secondary battery including an active material for a positive electrode, together with a negative electrode, a separator and a lithium salt containing nonaqueous electrolyte, and containing a sulfate radical preferably formed of an inorganic or organic sulfate of 0.01 to 5 weight % to the positive electrode material (see abstract). Inoue et al. disclose in paragraph 0021, a general formula for the positive active material: $\text{Li}_x\text{Ni}_y\text{Co}_{1-y-z}\text{M}_z\text{O}_2$, where M is at least one metal selected from Al, Mn, Ti, Fe, and Zn, and $0.1 \leq x \leq 1.05$, $0 \leq y \leq 0.9$ and $0 \leq z \leq 0.2$. Inoue et al. also discloses mixing the raw materials of the active material at high temperatures so as to affect the lattice parameters and crystalline structure of the positive active material, which then affect the occupancy rate of lithium and the weight % of carbon present in the active material. Inoue et al. does not disclose wherein the

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occupancy rate of lithium found from the x-ray diffraction chart and using Rietveld analysis is 98% or greater and the carbon amount measured by way of the high frequency heating-infrared absorption method being 0.12 wt% or less. However, properties of said active material for a positive electrode of a nonaqueous electrolyte secondary battery, such as the occupancy rate of lithium found from the X-ray diffraction chart and using Rietveld analysis being 98% or greater, the carbon amount measured by way of the high frequency heating-infrared absorption method being 0.12 wt% or less, and a Karl Fischer moisture content of 0.2 wt% or less when heated to 180°C, are inherent, given that the active material for a positive electrode disclosed by Inoue et al. and the instant application are the same and therefore have the same properties. A reference that is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities or possibilities. See MPEP 2112.

Response to Arguments

4. Applicant's arguments filed June 10, 2008, have been fully considered but they are not persuasive.

Applicant's principal arguments are:

(a) Applicant asserts that the purpose of the supplied declaration was, and is, to demonstrate that Inoue's lithium composite oxides do not possess the claimed lithium site occupancy rate and carbon content, despite any alleged compositional similarity with the claimed invention. In addition, Applicant asserts

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that Inoue does not disclose a specific method for manufacturing a composite nickel-lithium oxide in accordance with its disclosure. Thus, a simple side by side comparison of the claimed invention and an example in Inoue is not possible, or would be inconclusive with respect to the present claims.

(b) Applicant asserts that because Inoue does not disclose a specific method for manufacturing a composite nickel-lithium oxide, samples A, B, and C in the declaration were formulated by: a) preparing a composite nickel hydroxide in accordance with the present application (see specification, example 1, table 1, and page 21, line 15-page 22, line 20); b) preparing a commercial lithium carbonate with a sulfate radical content similar to that of samples C-8 through C-10 of Inoue; and c) mixing the lithium carbonate into the composite nickel hydroxide, sintering the mixture, crushing the obtained sintered body, and screening the obtained powder using the method disclosed at page 23, lines 1-12 of the present specification. Thus, samples A, B, and C of the declaration were manufactured from lithium carbonate, in accordance with the disclosure of Inoue. Applicant also asserts the once prepared, the lithium site occupancy rate and carbon content of samples A- C of the declaration was measured for comparison against the claimed invention. As shown in the declaration, samples A-C did not exhibit the claimed lithium site occupancy rate or carbon content. That is, samples A, B, and C, which are compositionally similar to Inoue's oxides, and which are made from similar starting materials as Inoue (e.g., lithium carbonate), did not exhibit the claimed site occupancy rate and carbon content. Applicants

have prepared two additional samples, D and E, to provide a more "rounded" set of data, per the Office's request.

(c) Applicant asserts that at least a portion of the Office's inherency argument appears to be based on Inoue's disclosure of lithium composite oxide compositions having lithium "with a stoichiometry of 1." Applicants respectfully submit that this position is erroneous, however, at least because it inappropriately equates the stoichiometric subscripts of Inoue's formulae with lithium site occupancy rate.

(d) Applicant asserts that it is clear that to establish a prima facie case of obviousness, an examiner must, among other things, identify a reason why a person of ordinary skill in the art would modify a cited reference in a proposed manner. In the present case, however, the Office has not pointed to any evidence establishing why one of ordinary skill would modify Inoue's compositions in the manner asserted, i.e., to reduce their carbon content to 0.12% or less. Rather, the Office merely asserts, without justification, that the claimed carbon content would have been desirable and obvious to a person of ordinary skill in the art at the time of the invention. Applicants respectfully submit that such bald assertions, without evidence, are insufficient to establish a prima facie case of obviousness.

In response to Applicant's arguments, please consider the following comments:

(a) The instant invention is to a product; i.e. an active material for a positive electrode, therefore, the method steps of the product are not required to be disclosed by the Inoue reference. Nevertheless, Inoue does disclose the steps for preparing the positive active material in paragraphs 0030-0037.

(b) The submitted declaration and additional samples, D and E, are still not commensurate in scope with the instant invention. Applicant prepared a nickel hydroxide composition in accordance with the present application, and a lithium carbonate with a sulfate radical "similar to that of samples C-8 through C-10 of Inoue". By Applicant own admission, "similar" is not "same", and the results of mixing and measuring for comparison against the claimed invention, the nickel hydroxide and the lithium carbonate, are not commensurate in scope with the instant invention. Inoue does not use a nickel hydroxide solution when preparing the positive active material and Applicant does not use a lithium carbonate when preparing the positive active material. Therefore, the comparison presented in the declaration by Applicant is not accurate.

(c) Inoue discloses the lithium being present in the positive active material in a ratio of more than 0.99 and less than or equal to 1.10, which is close to a stoichiometry of 1. While the lithium site occupancy rate is not specifically disclosed, it is known in the art that size of the lithium atoms are much smaller than size of cobalt and nickel atoms. This would allow for lithium atoms to occupy more space within the lattice work of the positive active material than any of the other reactants. Because the majority of reactant in the positive active

material is lithium (0.99 to 1.10), and because the atom size of lithium is so small, the lithium occupancy rate of lithium would exceed 98%.

(d) The general state of the art has been identified by the examiner and made of record above. For a rejection under 35 U.S.C §102/103 based on inherency, MPEP 2112 states, "once the examiner provides a rationale tending to show the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to the applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. The PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his or her claimed product. Whether the rejection is based on inherency under 35 U.S.C. 102, or prima facie obviousness under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...".

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karie O'Neill whose telephone number is (571)272-8614. The examiner can normally be reached on Monday through Friday from 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795

Karie O'Neill
Examiner
Art Unit 1795

KAO

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